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09/882,241	06/15/2001	Robert C. Schmidt JR.	1933.BDM	1360

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EXAMINER

BISSETT, MELANIE D

ART UNIT PAPER NUMBER

1711

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/882,241

Applicant(s)

SCHMIDT ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The rejections based on 35 USC 102 and 103 using Wolinski have been maintained. The rejections using Helmeke et al. as a primary reference have been withdrawn based on the applicant's amendment but would be reintroduced if the added limitations are later removed. New rejections have also been added, and the rejection based on 35 USC 112, 2<sup>nd</sup> paragraph has been reintroduced based on the amendment to the specification.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims now recite "adhesive comprises essentially no crystalline monomers and provides sufficient green strength such that clamping is not necessary during use". However, the specification gives no guidance to exclude crystalline monomers or exclude clamping from the method. Furthermore, the specification does not provide sufficient description of when clamping is necessary or specifically how to provide sufficient green strength to avoid the need for clamping.

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Because the specification gives no guidance for the added limitations, the rejection is deemed proper.

4. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 recites "method of reducing or eliminating bondline failures". However, the specification does not sufficiently enable one of ordinary skill in the art to completely eliminate bondline failure. The specification gives only one example of "no failure" but only tests the article for a finite period of time. This does not specifically indicate that bondline failure has been *eliminated* but instead shows that bondline failure has been prevented for a period of time. The specification does not provide guidance for completely eliminating bondline failure.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 recites a hydroxyl reactive acrylic and a non-reactive acrylic. However, the specification refers to OH-functional acrylic materials as both functional and non-functional (Table and following paragraph). By having a functional OH group, the

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materials would be reactive to an extent. Also, the prosecution shows that the OH-functional acrylic materials are reactive or non-reactive (amendment to specification). The definition of "non-reactive acrylic" is unclear in the present application and thus it renders the claims indefinite. One of ordinary skill in the art would not know what acrylic materials are intended by the phrase "non-reactive acrylic".

8. Claims 1 and 7 recite "sufficient green strength such that clamping is not necessary during use." However, the applicant has not provided definition for when clamping is necessary. One of ordinary skill in the art would not know the bounds of when clamping is *necessary* or when clamping is simply more beneficial. Is clamping ever completely necessary?

9. Claim 2 recites "functional acrylic". Because claim 1 recites a "hydroxyl reactive acrylic" and a "non-reactive acrylic", it is unclear whether the applicant intends the "functional acrylic" as an additional material or whether the applicant intends to limit the amount of the "hydroxyl reactive acrylic" to the claimed amount.

### ***Claim Rejections - 35 USC § 102***

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. First, it is noted that, in light of the specification, the examiner interprets the claims as encompassing reaction products of the claimed reactants. The examples of the present specification only show an adhesive applied after reaction but before curing. Thus, the claimed adhesives encompass reaction products of the claimed reactants.

12. Claims 1-2, 4, 6-8, 10, and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wolinski.

13. From a prior Office action:

Wolinski discloses an adhesive comprising polyester polyols (column 4, lines 15- 62) and/or polyether polyols (column 3, lines 44-68) with isocyanates (column 5, line 41 to column 6, line 32), reactive acrylics (column 6, line 55 to column 7, line 44), a free- radical catalyst (column 8, lines 6-8), and fillers (column 8, line 45). This composition meets the compositional requirements of claims 1, 4, 6-7, 10, and 12 due to the interpretation of the claims described earlier in the office action. Here the examiner notes that the reference also teaches the adhesive's use to bond two substrates together, so article of manufacture in claim 13 and the methods of bonding in claims 1 and 7. Regarding the materials being subject to stress prior to adhesive cure (in claims 1 and 7), the examiner notes that this part of the claim is not further limiting the method that is claimed.

The weight percents that the applicant claims in claims 1-2 and 7-8 are also present in the reference (column 8, lines 10-29), as are the cooling in ambient air (exposed to moisture in the air) and hot-melt characteristics of the adhesive (column 13, lines 38-42). The amounts of the isocyanate and polyol in Wolinski are not expressly stated, though it is immediately envisioned that the polyurethane is made from a mixture of isocyanates and polyols that are present in an amount within the wide range that the applicant claims, as such compositions are well known in the art to form suitable polyurethanes.

Regarding the newly added limitation that the acrylic is hydroxyl functional, the examiner notes that the acrylic in Wolinski (column 7, lines 1-8) meets this limitation.

14. Additionally, the examples show that the adhesives are applied as one-part adhesives. Also, because the reference does not suggest the necessity of adding a crystalline monomer, it is the examiner's position that the reference anticipates the claimed "essentially no crystalline monomers". Because only contact pressure is used to adhere the two substrates at the time of contact, it is the examiner's position that the reference suggests sufficient green strength such that clamping is not necessary during use of the adhesive (procedure for example I). The reference does not suggest clamping during contact or any time after contact. "During use" of the adhesive, clamping is not deemed necessary by the reference.

***Claim Rejections - 35 USC § 103***

15. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
16. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Yang et al.
17. From a prior Office action:

Yang et al. discloses a hot melt adhesive comprising polyisocyanate (column 5, lines 4-22), polyether and/or polyester polyols (column 4, lines 24-55), catalyst (see the abstract), filler (column 8, line 45), and reactive acrylates (column 5, line 61 to column 6, line 8). The amounts of each (column 7, lines 9-32 and column 7, line 64 to column 8, line 16) meet the restrictions in claims 1-2, 4, 6-8, 10, and 12. Further, the reference teaches the use of the hot melt adhesive to be the same as the method that the applicant claims in claims 1 and 7 and are useful in bonding multiple substrates together (column 9, line 48 to column 10, line 2) to form an article, meeting claim 13.

Wolinski discloses the hot melt adhesive of claims 1 and 4, but does not disclose that DMDEE is the catalyst in the reaction. Yang et al. discloses that DMDEE is a useful catalyst in polyurethane hot melt moisture cure adhesives, as disclosed above.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the invention in Wolinski. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a catalyst. Therefore it would have been obvious to combine Yang et al. with Wolinski to obtain the invention as specified in claims 5 and 11.

18. Additionally, note that Yang teaches a preference for DMDEE (col. 3 lines 45-51). The catalyst of the invention serves to improve pot stability and increase cure rate while using only a minute amount (col. 2 lines 35-61). Thus, it would have been prima facie obvious to include DMDEE in the polyurethane adhesive of Wolinski's invention to improve stability and cure rate while using only a small amount.

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19. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Helmeke et al.

20. From a prior Office action:

Wolinski teaches most aspects of the invention, as discussed above, but does not include the DMDEE catalyst or the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Helmeke et al. discloses these aspects of the invention. The acrylic polymer that is included in the adhesive composition (column 6, lines 33-56) improves the green strength of the adhesive and the catalyst for the reaction is DMDEE (column 6, lines 14-21).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski and to use DMDEE as the catalyst for the polymerization in the adhesive. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer and to catalyze the reaction using a known catalyst (DMDEE). Therefore it would have been obvious to combine Helmeke et al. with Wolinski to obtain the invention as specified in claims 1-13.

21. Claims 1-4, 6-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Markevka et al.

22. From a prior Office action:

Wolinski teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Markevka et al. discloses this aspect of the invention, and the acrylic polymer that is included in the adhesive composition (column 5, line 33) improves the green strength of the adhesive (column 6, line 46).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Markevka et al. with Wolinski to obtain the invention as specified in claims 1-4, 6-10, and 12-13.

23. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Markevka et al. as applied to claims 1-4, 6-10, and 12-13 above, and further in view of either of Yang et al. or Helmeke et al.



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24. From a prior Office action:

The combination of Wolinski and Markevka et al. do not include DMDEE as the catalyst in the reaction. However, both Yang et al. (see the abstract) and Helmeke et al. (column 6, lines 14-21), teach that DMDEE is a well-known catalyst in adhesives of this type.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the reaction in the adhesive taught by the combination of Wolinski and Markevka et al. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a catalyst. Therefore it would have been obvious to combine Yang et al. and Helmeke et al. with the combination of Wolinski and Markevka et al. to obtain the invention as specified in claims 5 and 11.

25. Claims 1-4, 6-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Shimizu.

26. From a prior Office action:

Wolinski teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Shimizu discloses this aspect of the invention, and the acrylic polymer that is included in the adhesive composition (column 5, lines 61-66) improves the performance of the adhesive (see the abstract).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski. The motivation for doing so would be to improve the performance of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Shimizu with Wolinski to obtain the invention as specified in claims 1-4, 6-10, and 12-13.

27. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Shimizu as applied to claims 1-4, 6-10, and 12-13 above, and further in view of either Yang et al. or Helmeke et al.

28. From a prior Office action:

The combination of Wolinski and Shimizu do not include DMDEE as the catalyst in the reaction. However, both Yang et al. (see the abstract) and Helmeke et al. (column 6, lines 14-21), teach that DMDEE is a well-known catalyst in adhesives of this type.

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At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the reaction in the adhesive taught by the combination of Wolinski and Shimizu. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a catalyst. Therefore it would have been obvious to combine Yang et al. and Helmeke et al. with the combination of Wolinski and Shimizu to obtain the invention as specified in claims 5 and 11.

### ***Response to Arguments***

29. In response to the applicant's arguments that the amendments have overcome the prior art rejections, it is first noted that it is the examiner's position that the amendments add new matter to the specification. It is further noted that the prior art teachings encompass the newly added limitations. The references do not teach that clamping is necessary to the adhesion of the substrates. Thus, it is the examiner's position that the materials of Wolinski's invention inherently possess a green strength such that clamping is not necessary. The reference merely specifies that the substrates must make contact. Also, the adhesives of Wolinski are used in one part.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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